

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Amended) A method for quantification of strain imaging comprising ~~the steps of:~~
 - (a) performing a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;
 - (b) providing a strain estimate for each of ~~the~~ said at least two ROIs based upon said motion analysis; and
 - (c) comparing ~~the~~ said strain estimates of each of ~~the~~ said at least two ROIs to quantify the strain for the at least two ROIs.
2. (Amended) The method of claim 1 wherein ~~the~~ said performing step (a) comprises ~~the steps of:~~
 - (a1) generating a plurality of blocks for each of ~~the~~ said at least two ROIs; and
 - (a2) utilizing a block matching technique to perform a motion analysis on each of ~~the~~ said at least two ROIs.
3. (Amended) The method of claim 2 wherein each of ~~the~~ said plurality of blocks touch a boundary of ~~the~~ said at least two ROIs.

4. (Amended) The method of claim 1 wherein ~~the said~~ providing step (206)-(b) is performed in accordance with ~~the~~ equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is the strain estimate; and where a_i and b_i are the displacement components for two blocks, which cross over ~~the~~ a boundary of a specific ROI, in ~~the~~ a direction of i-th A-line, d_i is a distance between ~~the~~ said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering ~~the~~ said ROI.

5. (Amended) A method for quantification of strain imaging comprising ~~the steps of:~~

(a) performing (206) a motion analysis on a plurality of selected regions of interest (ROIs) (302 and 304; ~~the~~ said performing step (a) further comprising comprises the steps of: (a1) generating a plurality of blocks (150) for each of ~~the~~ at least two ROIs (302 and 304); and (a2) utilizing a block matching technique to perform a motion analysis on each of ~~the~~ said plurality of ROIs (302 and 304), wherein each of ~~the~~ said plurality of blocks (150) touch a boundary of ~~the~~ said at least two ROIs (302 and 304);

(b) providing a strain estimate for each of ~~the~~ said plurality of ROIs (302 and 304 based upon said motion analysis; and

(c) comparing (208) ~~the~~ said strain estimates of each of ~~the~~ said plurality of ROIs to quantify ~~the~~ said strain for ~~the~~ said at least two ROIs (302 and 304).

6. (Amended) The method of claim 5 where the said strain estimate is performed in accordance with the equation:

$$ST = \left\| \sum_{i=i1}^{i2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is the strain estimate; and where a_i and b_i are the displacement components for two blocks, which cross over the a boundary of a specific ROI, in the a direction of i-th A-line, d_i is a distance between the said two blocks, and i_1 and i_2 are indices along the an A-line on a B-mode image covering that specific ROI.

7. (Amended) A computer readable medium for quantification of strain imaging including program instructions for:

- (a) performing (204) a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;
- (b) providing (206) a strain estimate for each of the said at least two ROIs based upon said motion analysis; and
- (c) comparing (208) the strain estimates of each of the said at least two ROIs to quantify the strain for the said at least two ROIs.

8. (Amended) The computer readable medium of claim 7 wherein the said performing said motion analysis (206) step (a) comprises the steps of:

- (a1) generating a plurality of blocks (150) for each of the said at least two ROIs (302 and 304); and

(a2) utilizing a block matching technique to perform a motion analysis on each of the ~~the said~~ at least two ROIs (302 and 304).

9. (Amended) The computer readable medium of claim 7 wherein each of the said plurality of blocks touch a boundary of the ~~said~~ at least two ROIs (302 and 304).

10. (Amended) The computer readable medium of claim 7 wherein said the providing said strain estimate step (206) (b) is performed in accordance with the equation:

$$ST = \left\| \sum_{i=i1}^{i2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is the strain estimate; and where a_i and b_i are the displacement components for two blocks, which cross over the a boundary of a specific ROI, in the a direction of i-th A-line, d_i is a distance between the said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI.

11. (Amended) A computer readable medium for quantification of strain imaging having program instructions for:

(a) performing (206) a motion analysis on a plurality of selected regions of interest (ROIs) (302 and 304); the said performing step (a) further comprising ~~comprises~~ the steps of: (a1) generating a plurality of blocks (150) for each of the said plurality of ROIs (302 and 304);

(a2) utilizing a block matching technique to perform a motion analysis on each of the said plurality of ROIs (302 and 304), wherein each of the said plurality of blocks touch a boundary of the said plurality of ROIs (302 and 304) ;

(b) providing (206) a strain estimate for each of the said plurality of ROIs (302 and 304) based upon said motion analysis; and

(c) comparing (208) the strain estimates of each of the said plurality of ROIs to quantify the said strain for the at least two ROIs (302 and 304).

12. (Amended) The computer readable medium of claim 11 ~~wherein~~ the strain estimate is performed in accordance with the equation:

$$ST = \left\| \sum_{i=i1}^{i2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

where ST is the strain estimate; and where a_i and b_i are the displacement components for two blocks, which cross over the a boundary of a specific ROI, in the a direction of i-th A-line. d_i is a distance between the said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI.

13. (New) A method for quantification of strain imaging comprising:

(a) performing a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;

(b) providing a strain estimate for each of said at least two ROIs said strain estimate being performed in accordance with equation:

$$ST = \left\| \sum_{i=i1}^{i2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a distance between said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering the ROI.

14. (New) A method for quantification of strain imaging comprising:

(a) performing a motion analysis on a plurality of selected regions of interest (ROIs);
said performing further comprising: (a1) generating a plurality of blocks for each of at least two ROIs; and (a2) utilizing a block matching technique to perform a motion analysis on each of said plurality of ROIs, wherein each of said plurality of blocks touch a boundary of said at least two ROIs;

(b) providing a strain estimate for each of said plurality of ROIs, said strain estimate performed in accordance with equation:

$$ST = \left\| \sum_{i=i1}^{i2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a

distance between two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI; and

(c) comparing strain estimates of each of said plurality of ROIs to quantify the strain for said at least two ROIs.

15. (New) A computer readable medium for quantification of strain imaging including program instructions to perform a method comprising:

(a) performing a motion analysis on at least two selected regions of interest (ROI) before and after tissue compression;

(b) providing a strain estimate for each of said at least two ROIs, said strain estimate performed in accordance with equation:

$$ST = \left\| \sum_{i=i1}^{i2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a distance between said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI; and

(c) comparing strain estimates of each of said at least two ROIs to quantify the strain for at least two ROIs.

16. (New) A computer readable medium for quantification of strain imaging having program instructions for:

(a) performing a motion analysis on a plurality of selected regions of interest (ROIs);
said performing further comprising: (a1) generating a plurality of blocks for each of said plurality of ROIs;

(a2) utilizing a block matching technique to perform a motion analysis on each of said plurality of ROIs, wherein each of said plurality of blocks touch a boundary of said plurality of ROIs;

(b) providing a strain estimate for each of said plurality of ROIs, said strain estimate performed in accordance with equation:

$$ST = \left\| \sum_{i=i_1}^{i_2} \frac{(a_i - b_i)}{d_i} \right\| \times 100\%$$

wherein ST is strain estimate; and wherein a_i and b_i are displacement components for two blocks, which cross over a boundary of a specific ROI, in a direction of i -th A-line, d_i is a distance between said two blocks, and i_1 and i_2 are indices along an A-line on a B-mode image covering that specific ROI; and

(c) comparing strain estimates of each of said plurality of ROIs to quantify strain for at least two ROIs.